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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,913	03/31/2004	Gopalakrishnan G. Juttu	STC-02-0004	6342

7590 09/06/2005  
Jim Wheelington  
SABIC Americas, Inc.  
SABIC Technology Center  
1600 Industrial Blvd.  
Houston, TX 77478

EXAMINER
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JOHNSON, CHRISTINA ANN

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 09/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

87

## Office Action Summary

Application No.

10/814,913

Applicant(s)

JUTTU ET AL.

Examiner

Christina Johnson

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 17-47 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/31/04</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 38-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. Claim 38 recites a formula for the catalyst wherein M is a noble metal, X is a tetravalent element and Y is a trivalent element. Claims 39-41 further define M, X, and Y. These limitations render the claim indefinite because they appear to be inconsistent with claim 22, upon which claims 38-42 are dependent. Claim 22 requires M to be platinum, X to be germanium, and Y to be aluminum. Therefore, claims 38-42 appear to be broader in scope than claim 22 which is improper. For the purposes of search and examination, these claims have been examined consistent with claim 22 and therefore, M is considered to be platinum, X is considered to be germanium, and Y is considered to be aluminum.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5. Claims 17-20, 22-25, 29-35, and 38-44 are rejected under 35 U.S.C. 102(b) as being anticipated by Miller.

Miller (US 5,558,851) discloses crystalline zeolite such as ZSM-5 and zeolite beta, which may be prepared from a reaction mixture containing silicon, germanium, or both (i.e.  $YO_2$ ), and aluminum (i.e.  $W_2O_3$ ) (column 9, lines 5-25). Such a composition with yield a  $YO_2/W_2O_3$  ratio of 12 to infinity (column 9, line 12-20). It is taught that the zeolite can be used in combination with a hydrogenation promoter such as platinum, added by ion exchange or impregnation, followed by calcination (column 13, lines 5-40). The reference teaches, by way of example, a platinum amount of 0.6wt% (Example 11). The catalyst composition may be used in a variety of hydrocarbon conversion processes, including aromatics formation.

As each and every element of the claimed invention is taught in the prior art as recited above, the claims are anticipated by Miller et al.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. Claims 23-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller as applied to claims 17-20, 22-25, 29-35, and 38-44 above, and further in view of Katsuro et al.

The teachings of Miller are as described above for claims 17-20, 22-25, 29-35, and 38-44.

With respect to claims 23-25, if it is considered that the ratio disclosed by Miller is not sufficiently specific to meet the claimed ratio within the meaning of 35 USC 102, it is the position of the examiner that a rejection under 35 USC 103 is appropriate.

In this case, the difference between the reference and the claims is that Miller does not specifically disclose the silicon-germanium to aluminum atomic ratio, as required by claims 23-25, or that silica to germania ratio, required by claims 26-28.

Katsuro et al. (US 5,574,172) discloses a zeolite such as zeolite ZSM-5 and zeolite beta, having the composition  $xAl_2O_3ySiO_2zTbO_c$ , wherein T may be germanium (column 2, lines 30-45). The ratios taught by the reference would meet the instantly claimed ratios. Refer to column 2, lines 50-56.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the composition of Miller to include the use of the zeolites having the ratios disclosed by Katsuro et al. One of ordinary skill would have been motivated to do so with a reasonable expectation of success because Katsuro et al. specifically provides a composition taught by Miller as suitable.

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8. Claims 21, 36-37, and 45-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller as applied to claims 17-20, 22-25, 29-35, and 38-44 above, and further in view of Froment et al.

The teachings of Miller are as described above for claims 17-20, 22-25, 29-35, and 38-44.

The difference between the reference and the claims is that the reference does not disclose that the catalyst is sulfided.

Froment et al. (US 5,672,796) discloses a catalyst composition comprising a ZSM-5 zeolite and platinum which is useful in aromatization processes (column 1, lines 10-20). The reference teaches that by partially sulfiding the catalyst prior to use, the catalyst has a substantially increased run length and increased selectivity and activity (Abstract and column 1, lines 55-65). The partial sulfiding is carried out by reducing the active metals with hydrogen, contacting with hydrogen sulfide, followed by an additional hydrogen contacting step (column 5, lines 38-46).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the composition and method of making taught by Miller to include the partial sulfiding taught by Froment et al. One would have been motivated to do so in order to obtain a catalyst composition of increased selectivity that had a longer lifetime. Because both catalyst compositions are useful in the same process, one would have a reasonable expectation of success from the combination.

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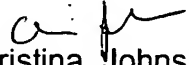
**Conclusion**

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christina Johnson whose telephone number is (571) 272-1176. The examiner can normally be reached on Monday-Friday, 7:30-5, with Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (571) 272-1171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Christina Johnson  
Primary Examiner  
Art Unit 1725

9/1/05

CAJ  
September 1, 2005